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Claus Bischoff

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EXAMINER

VANAMAN, FRANK BENNETT

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3618

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/532,380	Applicant(s) BISCHOFF ET AL.	
	Examiner Frank B. Vanaman	Art Unit 3618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Status of Application

1. Applicant's amendment, filed May 9, 2008, has been entered in the application. Claims 12-23 are pending, with claim 23 being newly added.

Claim Rejections - 35 USC § 112

2. Newly presented claim 23 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

3. Newly presented claim 23 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

4. The following comments are directed to both the description requirement rejection and the enablement requirement rejection. Claim 23, newly added, recites that "electrical losses during conversion of the drive train are coverable without charging or discharging a battery". At page 5, line 20 the specification sets forth that a sum of the mechanical power and power loss of electrical machines 1 and 2 are summed to zero (the variables being defined at lines 25-28). This equation is not itself directed to the setting of an operating point. At page 7, lines 8-21, the specification refers to the setting of an operating point using at least a required electrical power (P_{Bnz}), which may be related to the equation summing electrical machines' power and loss terms (e.g., at page 6, line 1). Beginning at page 7, line 25, the specification describes the setting of the operating point, however there is no reference in this description to the accommodation of the loss terms as being "coverable" without charging or discharging a battery. As such, the specification initially fails to disclose how such a process occurs in the invention. Further, in view of this failure to disclose, one of ordinary skill in the art, attempting to construct the invention as specifically claimed in claim 23 would not be able to make and/or use the invention in that there is no disclosure which supports how

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one would construct a device, or what specific method steps would be employed, without the requirement of undue and non-trivial experimentation on the part of the ordinary practitioner.

5. Newly presented claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 23 recites that "electrical losses of the drive train during conversion of the drive train are coverable without charging or discharging a battery". Initially, the claim is indefinite in that it is not clear what is meant by "conversion of the drive train". Further it is not clear what particular relationship is intended by applicant's recitation of "coverable" Further still, it is not clear whether the recitation even constitutes a further narrowing of the claim from which it depends in that there appears to be no method step recited.

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 12, 13, 18, 19, 21 and 22 are rejected under 35 U.S.C. 103(a) as obvious over Hara et al. (US 5,713,814) or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hara et al. in view of King (US 5,345,154).

Hara et al. teach a control system for a motor vehicle having a hybrid configuration including an engine (1) and motor/generator (5) as well as a transmission (4) for driving vehicle wheels (19), including a controller (10) which controls the operation of the vehicle including the engine, battery (7) which constitutes at least a portion of an on-board electrical system of the vehicle which requires power based on its level of charge, and consumes power upon charging, to the breadth this limitation is actually recited in the claims, motor/generator, and transmission, and monitors an engine speed (11), vehicle speed (14), motor generator speed (15) and battery state of charge (17), wherein battery state of charge, understood to be inversely proportional to the power required by the battery to return the battery to a full charge, is employed to select amongst a plurality of characteristic operating maps (e.g., figures 14, 15, 16),

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each of which relate kinematic and dynamic degrees of freedom to operational configuration of the vehicle including at least a speed and a set-point throttle position.

Hara fails to explicitly teach that the battery, which constitutes a consumer when it requires a charge and/or is being charged, constitutes plural consumers. It is exceptionally well known in the art that a battery may be made up of a plurality of cells connected to one another either in series, or parallel or a combination thereof, each cell being charged and discharged, as such, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the battery as a plurality of cells, each of which is capable of consuming electrical energy when in need of charging or when being charged, for the very well known purpose of providing a battery having a desired operating voltage, the operating voltage dependent upon the electrical interconnections of the cells.

Alternatively to the obviousness rejection set forth above, the reference to Hara et al. fails to explicitly teach that a battery state of charge is related to a power requirement. King teaches that it is well known in hybrid vehicle operation that a power requirement (e.g., for recharging) of a battery is related in an inverse manner to the battery state of charge (see col. 4, lines 8-26, and col. 4, lines 31-45, and col. 4, line 64 through col. 5, line 49). It would have been obvious to one of ordinary skill in the art at the time of the invention to explicitly relate the power required to charge a battery of the vehicle taught by Hara et al. as based on the battery state of charge, as suggested by King, the state of charge already taught to be measured by Hara et al. and already taught to be used to control the selection of characteristic control maps.

8. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hara et al. (cited above) or alternatively Hara et al, in view of King. The reference to Hara et al. or Hara et al. as modified by King is discussed above and while teaching a setpoint throttle position, fails to explicitly teach a setpoint torque. It is very well known in the vehicle arts that a desired torque is set by either a throttle position or a braking control position, and as such, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a setpoint torque in the engine/motor control map in order to

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tailor the operation of the vehicle to accommodate braking conditions (i.e., when a throttle opening would expectedly be at zero) as well as speed increase and/or maintenance conditions.

9. Claims 14-17, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Hara et al. in view of Yoshino et al. (EP 1,142,749, cited by applicant) or alternatively Hara et al. in view of King and Yoshino et al. The reference to Hara et al. or alternatively Hara et al. as modified by King is discussed above and fails to teach the use of the electrical power required by consumers on the vehicle as governing the choice of characteristic map. The examiner notes that indirectly, any consumer requiring power from the battery will affect the battery state of charge, and as it is very common for a vehicle to have at least one on-board consumer (e.g., radio, light, wiper motor, etc.) it is initially well known that the use of a consumer will have an effect on the battery condition. Further Yoshino teaches that it is well known to additionally take into consideration the on-board loads (paragraph 0052, value tTg) in determining an overall power requirement in the management of an electrical system of a hybrid vehicle. As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to explicitly take into consideration the value of on-board power loads for the vehicle in determining an operational mode for the purpose of anticipating load conditions prior to a measurable change in battery state of charge in the vehicle taught by Hara et al. or alternatively the vehicle of Hara et al. as modified by King, thus promoting a more responsive control system.

Claims not Rejected over the Prior Art

10. Newly presented claim 23 is not rejected as being anticipated by or as obvious over the prior art of record, however the claim is not in condition for allowance in view of the 35 USC §112 first paragraph issues which are discussed above.

11. As regards the rejection of claim 23 under 35 USC §112, second paragraph, please also note that rejections under 35 USC §102 and 103 should not be based upon considerable speculation as to the meaning of the terms employed and assumptions as to the scope of the claims when the claims are not definite. See *In re Steele* 305 F.2d

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859, 862, 134 USPQ 292, 295 (CCPA 1962). When no reasonably definite meaning can be ascribed to certain terms in a claim, the subject matter does not become anticipated or obvious, but rather the claim becomes indefinite. See *In re Wilson* 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). As such the currently pending claims may be subject to prior art rejections not set forth herein upon the clarification of the claim language.

Response to Comments

12. Applicant's comments, filed with the amendment, have been carefully considered. Applicant has asserted that the reference to Hara et al. cannot anticipate the claims as amended in view of features which are identified as being in the specification. Although the claims are interpreted in light of the specification, limitations from the specification which are not otherwise claimed are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

As regards reading unclaimed limitations from the specification into the claims

From MPEP 2111:

During patent examination, the pending claims must be given their broadest reasonable interpretation consistent with the specification. *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). Applicant always has the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969) The court explained that "reading a claim in light of the specification, to thereby interpret limitations explicitly recited in the claim, is a quite different thing from 'reading limitations of the specification into a claim,' to thereby narrow the scope of the claim by implicitly adding disclosed limitations which have no express basis in the claim." The court found that applicant was advocating the latter, i.e., the impermissible importation of subject matter from the specification into the claim.). See also *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997).

Applicant's reference to the examiner's alleged assertion that "the characteristic maps in the present application are selected based on the battery's state of charge" is

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entirely unclear. The examiner has not suggested that such a selection is made in the present application. Applicant's fully responsive reply to the instant office action should clarify this issue, for example, by pointing out where in the previous or instant office action the examiner has made such a suggestion about the present application. As regards a battery as constituting a consumer the examiner notes that a battery having a low state of charge is an electric consumer in that it consumes energy delivered to it during the charging process. This is relatively well known in even the simplest electrical technology areas. Since it appears that applicant is not familiar with battery technology, the examiner has gone so far as to additionally cite and/or apply the reference to King (previously cited), which very clearly relates a power level consumed (e.g., negative values of the variable P_{bat} during a charging process) as inversely proportional to a state of charge, as would be expected in such condition, thus providing a factual basis to support the assertion.

As regards the provision of plural cells in a battery, in anticipation of applicant's assertion that there is no evidence that one of ordinary skill would know of such a fact, even though such an arrangement is both quite old and quite well known, see Triplett (US 3,566,985) which teaches that a battery arrangement commonly has plural cells, and that the operating voltage is based on the number of series cells.

Many of the difficulties encountered in the prosecution of patent applications may be alleviated if each applicant includes, at the soonest possible time, claims varying from the broadest to which he or she believes he or she is entitled to the most detailed that he or she is willing to accept.

Applicant's comments concerning newly added claim 23 are noted, however the claim lacks sufficient support in the specification as filed both under the description requirement and the enablement requirement.

Conclusion

13. Applicant's amendment necessitated the new and/or modified ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry specifically concerning this communication or earlier communications from the examiner should be directed to F. Vanaman whose telephone number is 571-272-6701.

Any inquiries of a general nature or relating to the status of this application may be made through either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A response to this action should be mailed to:

Mail Stop _____
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450,

Or faxed to:

PTO Central Fax: 571-273-8300

F. VANAMAN
Primary Examiner
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